



EMERGENCY PERIPARTUM HYSTERECTOMY: INDICATIONS AND OBSTETRIC OUTCOME (A 5-YEAR REVIEW)

Dr. Raghunath Bhattacharyya¹ | Dr. Kasturi Mukherjee²

¹ MS (G&O), Assistant Professor, College of Medicine & Sagore Dutta Hospital, Kolkata.

² Demonstrator, R. G. Kar Medical College, Kolkata.

ABSTRACT

Objective: To review cases of emergency peripartum hysterectomy regarding their incidence, risk factors, indications and complications and their results were carefully analysed.

Materials and method: A retrospective study of cases of emergency peripartum hysterectomy which were performed in the period between January 2011 and December 2015 at R. G. Kar Medical College & Hospital in West Bengal was done. Clinical data were extracted and closely interpreted.

Results: In the study period there were 84,093 deliveries and 81 cases of peripartum hysterectomies. The overall incidence was 0.096%. Caesarean hysterectomy was performed in 51 cases (0.373%) and postpartum hysterectomy was performed in 30 cases (0.042%). Total hysterectomy was performed in 23 cases (28.4%) and subtotal hysterectomy was performed in 58 cases (71.6%). The main indications for hysterectomy were uncontrolled postpartum haemorrhage (43.2%), ruptured uterus (32%) and morbidly adherent placenta (24.7%). There were 9 maternal deaths and 32 cases of stillbirths.

Conclusion: Peripartum hysterectomy is a major, life saving operation. Although PPH is the main indication, it is significantly associated with post caesarean cases. Obstetricians should identify patients at risk and anticipate the procedure and complications, as early intervention and proper management facilitate optimal outcome.

KEYWORDS: Peripartum Hysterectomy ; emergency Hysterectomy ; obstetric Hysterectomy.

Introduction:

Obstetric haemorrhage is still a major cause of maternal mortality across the world. Although advances have been made in the development of conservative medical and surgical treatment of obstetric haemorrhage, emergency peripartum hysterectomy (PH) remains a life-saving procedure in the management of intractable haemorrhage unresponsive to conservative treatment. Because of the increasing caesarean section (CS) rate world-wide and the concomitant rise in placenta previa and placenta accreta, the incidence of emergency PH is rising. Against this background we aimed to determine the incidence, indications, types of operation, complications, and outcome of emergency PH.

Methods:

Because of the emergent nature and rarity of PH, a hospital record review was the only feasible research design. A retrospective study of cases of emergency PH which were performed in the period between January 2011 and December 2015 at R. G. Kar Medical College & Hospital in West Bengal was done. Necessary approval of hospital authority was taken. Individual patient records were scrutinised and data such as patient demographic details, previous obstetric history, details of the index pregnancy and birth, indications for PH, outcome of the hysterectomy: postoperative complications, blood transfusions, length of hospital stay, histopathology, maternal death and stillbirths were recorded onto proformas.

Data were entered into Microsoft Excel database and statistical analysis was done by using Statistica Version 6 (Statsoft incorporation, Tulsa, Oklahoma, USA; 2001). Categorical variables were compared between groups by Fisher's Exact / Chi-square Test; Numerical variables were compared between groups by Student's upgraded t- test. All analyses were 2-tailed and P value <0.05 was considered to be statistically significant.

Results:

Eighty one mothers required emergency PH in 84,093 deliveries over the last 5 years, resulting in an emergency hysterectomy rate of 0.096% (95% CI 0.080% to 0.12%). Eight additional cases were noted, but the records were incomplete, and these cases were not included in the study. Thirty of 70442 mothers who delivered vaginally (0.042%) and 51 of 13651 mothers who delivered by CS (0.373%) required hysterectomies.

The mean age of the 81 mothers was 28.2 years (range 21–37). Fifty three percent were in the 26–30 years and 22.2% of the 31–35 years of age group.

The mean gestational age at delivery was 37.8 weeks (range 32–41).

Only six mothers were primigravida; 9 mothers were multigravidas with a history of abortions; 31 mothers were primipara; 30 mothers were multiparas; and 5 mothers were grand multiparas. 34 mothers had a history of CS previously.

Postpartum haemorrhage (PPH) (43.2%), ruptured uterus (RU) (32%) and morbidly adherent placenta (MAP) (24.7%) were the three major indications for PH. Uncontrollable primary PPH was the main cause for hysterectomy in almost all the cases. Previous CS (41.97%) and antepartum hemorrhage (25.92%) were the significant high risk factors.

Subtotal hysterectomy was performed in 58 cases (71.6%) and in the remaining 23 cases, total hysterectomy (28.4%) was done. Bilateral internal iliac artery ligation was done in 14 cases. Repair of the bladder wall injury was required in six cases.

All the mothers required blood transfusion; 24 needed four units, 41 needed three and 16 needed two. 36 mothers received fresh frozen plasma.

18.5% patients had no post-operative complication. The common complications were febrile illness (35.8%), wound infection (29.6%) and paralytic ileus (17.3%). Others were burst abdomen (8.6%), renal failure (3.7%), septicemia (6.2%) and VVF (2.5%). It was noted that those mothers who had complications usually had a combination of them, for example fever, wound infection and burst abdomen.

On an average, the hospital stay was of 11.5 days; mothers, who developed VVF, burst abdomen and renal failure, had a long hospital stay.

There were 9 maternal deaths giving a maternal mortality of 11.1% (95% CI 4.27% to 17.95%). These were due to DIC following acute blood loss in four, hypovolemic shock in three, septicemia in one and renal failure in one. There were 32 still births (39.51%; 95% CI 28.86% to 50.15%).

Regarding histopathology, data in the pathology departmental register revealed that the presence of morbidly adherent placenta was found in 26 specimens, fibroid (with diameters ranging from 2 to 5 cm) in four specimens, and others were histologically normal.

Discussion:

Emergency PH remains a potentially life-saving procedure which every obstetrician must be familiar with.

Incidence of emergency hysterectomy in the present study was 0.095% which is similar to that in many other studies as shown by Pawar et al (1998) 10, Sarah Glaze et al (2008) 9, and Praneshwari Devi et al (2004) 1. Some studies have shown lower incidence [Karen M. Flood et al (2009) 8, Wai Yoong et al (2006) 7, Selc,uk O zden et al (2004) 6] than us probably because our institution is an important referral centre in this region and most of our cases were referred from outside where antenatal check-up, labour monitoring, conservative management of PPH is not adequate. There are studies which also have shown much higher

incidence comparatively [Sahasrabhojane Mrinalini et al (2008) 5, Kant Anita et al (2005) 2, Kore et al (2001) 3] may be because of small number of cases for the study or the institutes are apex one serving only high risk cases which were referred from outside in moribund condition after complications had occurred.

The PPH is the most common indication for PH in our study. This is comparable to other studies as shown by Kant Anita et al (2005) 2, Sahasrabhojane Mrinalini et al (2008) 5, Wai Yoong et al (2006) 7, Selc, uk O zden et al (2004) 6, Sarah Glaze et al (2008) 9. In our study ruptured uterus (32%) was the next most common indication followed by morbidly adherent placenta (24.7%). In some other studies ruptured uterus was commonest indication as shown by Pawar et al (1998) 10, Pati S. et al (1998) 4, Kore et al (2001) 3. Ruptured uterus is a serious obstetric emergency with high maternal and perinatal mortality. Occurrence of uterine rupture is significantly associated with grand multiparity, scarred uterus, lack of proper antenatal care, unsupervised labour at home, injudicious use of oxytocin and prostaglandins. These factors are largely preventable.

Though total hysterectomy is operation of choice, subtotal hysterectomy is quicker and hence preferable in moribund patients. In case of placenta praevia, total hysterectomy is usually mandatory.

Postoperative shock, pyrexia, paralytic ileus, and wound infection were common complications. Prolonged labour, antepartum haemorrhage, obstructed labour, intrauterine manipulation and dormant sepsis probably account for these complications. These could be prevented by early referral of these cases to well equipped centres which can treat emergency obstetric cases promptly and efficiently.

In our study the maternal mortality was 11.1% which is comparable with Kant Anita et al (2005) 2, Kore et al (2001) 3, Wai Yoong et al (2006) 7 and Pawar et al (1998) 10.

The incidence of PH that occurred with a history of previous CS has increased significantly 8. The association between the rising CS rate and incidence of PH with a history of CS is attributable mostly to the occurrence of morbidly adherent placenta and ruptured uterus. There is significant increase in the maternal mortality, morbidity as well as stillbirths in the post caesarean group compared to the non post CS group who required hysterectomy. Operative difficulty as well as chances of injury to the ureter, urinary bladder are much more in the post CS group because of much higher incidence of placenta previa and morbidly adherent placenta.

Fortunately, the number of cases of PH has not increased significantly over the years in our study. Despite this finding, we are concerned that, with the worldwide increase in CS rates, there will be a significant domino effect involving increased deliveries after CS and increased morbidly adherent placenta and ruptured uterus cases. There is a concern that there will be a rise in the number of obstetric hysterectomies required in the future.

Conclusion:

Emergency PH remains an essential life-saving procedure. On one hand it is the last resort to save a mother's life, and on the other hand, the mother's reproductive capability is sacrificed. Many times it is a very difficult decision and requires good clinical judgement. Prompt performance of obstetric hysterectomy before the patient's clinical condition deteriorates is the main key to success.

Lastly, the long-term morbidity in cases of emergency hysterectomy is often not discussed. Depression due to perceived loss of femininity, cessation of menstruation and reproductive capacity has been well documented in women who have undergone elective hysterectomy for gynaecological causes. Psychological counselling and support is, therefore, crucial postoperatively in these cases.

Tables:

Table 1. General characteristics of Peripartum hysterectomy cases

Characteristics	Mean	Standard deviation
Age (years)	28.2	3.2
Gravidity (n)	2.8	1.13
Parity (n)	1.74	0.84
Gestational age (weeks)	37.8	1.59
Fetal weight (kg)	2.79	0.44
Duration of hospital stay (days)	11.5	3.9
Blood transfusion (units)	3	0.82
Maternal death (n)	9	

Table 2. Indications (n=81)

Indications	No.	Percentage
postpartum hemorrhage	35	43.20%
Atonic postpartum hemorrhage	17	
Placenta previa	8	
Multiple pregnancy	4	
Inversion of uterus	3	
Exact cause not specified	3	
Ruptured uterus	26	32%
Rupture of cesarean scar	16	
Grand multiparity	2	
Obstructed labor	2	
Misoprostol abuse	2	
Extension during cesarean	1	
Exact cause not specified	3	
Morbidly adherent placenta	20	24.7%
Previous cesarean section	14	
Placenta previa	5	
Exact cause not specified	1	

Table 3. Comparison of Post caesarean and non post caesarean cases of peripartum hysterectomy

Characteristics	Non Post caesarean (n=47)	Post caesarean (n=34)	p value
Age (years, mean \pm SD)	27.6 \pm 3.3	28.9 \pm 3.23	0.455
Gestational age (weeks, mean \pm SD)	38.2 \pm 1.3	37.1 \pm 1.9	0.003
Fetal weight (kg, mean \pm SD)	2.96 \pm 0.38	2.84 \pm 0.46	0.203
Indications (n, %)			
Postpartum haemorrhage	31; 66 %	4; 11.8%	<0.001
Uterine rupture	10; 21.3%	16; 47%	0.017
Morbid adherent placenta	6; 12.7 %	12; 35.2%	0.029
Total transfusion (units, mean \pm SD)	3.1 \pm 0.78	3 \pm 0.61	0.536
Type of hysterectomy (n, %)			
Total	6; 12.77 %	17; 50%	<0.001
Subtotal	41; 87.23 %	17; 50%	
Hospital stays (days, mean \pm SD)	10.9 \pm 3.3	12.3 \pm 4	0.089
Maternal death (n, %)	4; 8.5 %	5; 14.7%	0.481
Fetal death (n, %)	14; 29.7	18; 53%	0.041

Table 4. Comparison of studies of peripartum hysterectomy

Study	incidence (%)	indications (%)	maternal mortality (%)
Kant Anita et al (2005) ²	0.26	PPH (41.4); RU (36.5); MAP (12.2)	9.7
Pati S. et al (1998) ⁴	0.146	RU (64.4)	16.4
Kore et al (2001) ³	0.18	RU (38.2)	11.1
Sahasrabhojane Mrinalini et al (2008) ⁵	0.35	PPH (50)	10
Karen M. Flood et al (2009) ⁸	0.04	MAP (46), PPH (30)	-
Wai Yoong et al (2006) ⁷	0.028	PPH (77)	11.1
Selc, uk O zden et al (2004) ⁶	0.025	PPH (62.7)	8
Praneshwari Devi et al (2004) ¹	0.0779	MAP (26)	Nil
Sarah Glaze et al (2008) ⁹	0.08	PPH (37)	-
Pawar et al (1998) ¹⁰	0.09	RU (40)	10
Present study	0.096	PPH (43.2); RU (32); MAP (24.7)	11.1

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